

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY



(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

REC'D 23 DEC 2005

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Applicant's or agent's file reference INT1132MAJR	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/ZA2004/000110	International filing date (day/month/year) 17.09.2004	Priority date (day/month/year) 13.10.2003	
International Patent Classification (IPC) or national classification and IPC F42D1/04			
Applicant DETNET SOUTH AFRICA (PTY) LTD ET AL.			
1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36. 2. This REPORT consists of a total of 5 sheets, including this cover sheet. 3. This report is also accompanied by ANNEXES, comprising: a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 3 sheets, as follows: <input checked="" type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).			
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the opinion <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application			
Date of submission of the demand 26.08.2005		Date of completion of this report 27.12.2005	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Lostetter, Y Telephone No. +31 70 340-1098 	

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/ZA2004/000110

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

1-13 as originally filed

Claims, Numbers

1-15 filed with telefax on 26.08.2005

Drawings, Sheets

1/9-9/9 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing *(specify)*:
- ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages
- ☐ the claims, Nos.
- ☐ the drawings, sheets/figs
- ☐ the sequence listing *(specify)*:
- ☐ any table(s) related to sequence listing *(specify)*:

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
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International application No.
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Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	1-15
	No: Claims	
Inventive step (IS)	Yes: Claims	1-15
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-15
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V

**Reasoned statement with regard to novelty, inventive step or industrial applicability;
citations and explanations supporting such statement**

1. Reference is made to the following document:
D1: US-A-2 076 512 (SCHAFFLER-GLOSSL KONRAD) 6 April 1937 (1937-04-06)

2. Document D1 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document):

a detonator assembly which includes a first cable coil (5, *on the right of figure 5*) with first and second ends, a second cable coil (5, *on the left of figure 5*) with third and fourth ends, a detonator (1) connected to the first end of the first cable coil (5, *on the right of figure 5*), a first connector (9, *on the right of figure 4*) connected to the second end of the first cable coil (5, *on the right of figure 5*), and a second connector (9 *on the left of figure 4*) connected to the fourth end of the second cable coil (5, *on the left of figure 5*) and wherein a first variable length of cable, extending from the first end, can be drawn from the first cable coil (5, *on the right of figure 5*) without materially moving the first connector (9, *on the right of figure 4*) and a second variable length of cable, extending from the fourth end, can be drawn from the second cable coil (5, *on the left of figure 5*) without materially moving the first connector (9, *on the right of figure 4*).

The subject-matter of claim 1 differs from this known detonator assembly in that the first connector that is connected to the second end of the first cable coil is also connected to the third end of the second cable coil.

The subject-matter of claim 1 is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as avoiding the two variable lengths of cable associated with each detonator of a detonator assembly to become entangled with one another.

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(SEPARATE SHEET)**

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The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons: None of the documents cited in the search report discloses or suggests the differentiating feature of claim 1.

3. Claims 2-15 are dependent on claim 1 and as such also meet the requirements of the PCT with respect to novelty and inventive step.

CLAIMS

1. A detonator assembly which includes a first cable coil with first and second ends, a second cable coil with third and fourth ends, a detonator connected to the first end of the first cable coil, a first connector connected to the second end of the first cable coil and to the third end of the second cable coil, and a second connector connected to the fourth end of the second cable coil and wherein a first variable length of cable, extending from the first end, can be drawn from the first cable coil without materially moving the first connector and a second variable length of cable, extending from the fourth end, can be drawn from the second cable coil without materially moving the first connector.
2. A detonator assembly according to claim 1 wherein the first cable coil is provided in the form of a first tubular roll.
3. A detonator assembly according to claim 2 wherein the first end is inside the first tubular roll.
4. A detonator assembly according to any one of claims 1 to 3 wherein the second cable coil is in the form of a second tubular roll.
5. A detonator assembly according to claim 4 wherein the fourth end is inside the second tubular roll.
6. A detonator assembly according to any one of claims 1 to 5 wherein each cable coil is at least partly enclosed in sheet material.

7. A detonator assembly according to any one of claims 1 to 6 wherein the cable coils are co-axially aligned with each other.
8. A detonator assembly according to any one of claims 1 to 7 which includes confinement structure for maintaining the cable coils in a desired configuration.
9. A detonator assembly according to claim 8 wherein the confinement structure is a housing which is made from rigid sheet material.
10. A detonator assembly according to claim 8 wherein the confinement structure comprises flexible sheet material.
11. A detonator assembly according to claim 10 wherein the flexible sheet material is shrunk onto the cable coils.
12. A detonator according to any one of claims 8 to 11 wherein the first connector is accessible without removing the confinement structure.
13. A detonator according to any one of claims 8 to 12 wherein the confinement structure includes first and second compartments for the first and second cable coils respectively.
14. A detonator assembly according to claim 10 or 11 wherein the confinement structure is circular cylindrical.
15. A detonator assembly according to claim 10 or 11 wherein each cable coil comprises a plurality of windings which are arranged in overlying layers

around a hollow core and which form a circular cylindrical shape, with the first end extending from an innermost winding of the first cable coil, and the fourth end extending from an innermost winding of the second cable coil, the detonator assembly including confinement structure around the cable coils.